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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,321	10/18/2001	Yanling Zhou	211598US2	1536
22850	7590	11/04/2003	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			PAIK, SANG YEOP	
			ART UNIT	PAPER NUMBER
			3742	

DATE MAILED: 11/04/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/869,321

Applicant(s)

ZHOU, YANLING

Examiner

Sang Y Paik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 19.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 2, 3 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshida et al (US 6,080,970).

Yoshida et al shows a laminated ceramic heater having a disc-form ceramic substrate made of nitride having a heating surface, a resistance heating element (4) arranged on the opposite side of the heating surface, and another ceramic insulating covering layer deposited on the resistance heating element. Yoshida et al further shows that the ceramic substrate can be made of oxide glass such as alumina and the resistance heating element made of metal or conductive ceramic. Yoshida et al shows that the ceramic substrate is initially formed with the

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several green sheets with the heating element arranged thereon which are then sintered or heated to a high temperature.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al (US 6,072,162) in view of Kano et al (US 6,242,719) and Morita et al (US 5,118,983) or Mio et al (US 4,536,645).

Ito et al shows the ceramic heater claimed including an AlN ceramic substrate, a resistant heating element comprising one or more circuits on a surface of the ceramic substrate, the ceramic heater having through holes for accommodating lifting pins to lift a wafer. However, Ito et al does not show the ceramic substrate is a disc-formed and the insulating covering over the heating element.

Kano et al shows a ceramic heater having a disc-shaped ceramic substrate with a resistant heating element used for heating a semiconductor wafer. Kano further shows an insulating layer made of oxide glass such as silica covering the heating element.

Morita et al shows a sintered or baked ceramic heater having a ceramic substrate made of nitride ceramics with a resistance heating element formed thereon with an oxide glass insulating coating provided over the heating element. Morita et al shows that the thickness of the heating element is from few microns to 10 microns, and although Morita does not explicitly show the

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thickness of the insulating coating, the drawing figure suggests that the thickness of the coating layer is not more than the thickness of the heating element.

Mio et al shows a heating element having an insulation layer made of an oxide ceramic material such alumina or a resin material such as silicone resin.

In view of Kano et al, it would have been obvious to one of ordinary skill in the art to adapt Ito et al with the ceramic substrate in a disc-shape to accommodate the wafers that conventionally manufactured in the disc-shape so as to further uniformly heat the disc-shaped wafers in a disc-shaped ceramic heater; in view of Morita et al, it would have been obvious to one of ordinary skill in the art to adapt Ito et al with an oxide glass insulating layer or coating to insulate and protect the heating element having one or more circuits, and although the claimed thickness of the insulating layer is not explicitly disclosed by Morita et al, it would have been obvious to one of ordinary skill in the art to provide such layer with a thickness, including the claimed range, that would be sufficiently adequate to protect the heating element without incurring extraneous material cost and without lessening the heating capacity of the ceramic heater, and in view of Mio et al, it would have been obvious to use an oxide glass as well as polymer resin material as the suitable interchangeable insulating materials depending on the use of the ceramic heater in various temperature settings.

Response to Arguments

5. Applicant's arguments with respect to claims 1-22 and 24 have been considered but are moot in view of the new ground(s) of rejection.

With respect to Ito et al, the applicant argues that Ito et al does not control the temperature evenness of the ceramic substrate but of the temperature evenness of wafer. While

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the effects of the heater may be different, the structure of the Ito clearly teaches that the ceramic substrate having a plurality of heating circuits. Furthermore, Ito et al is capable of providing various heating distribution along its heating surface and it would also include even heat distribution along the heating surface.

With respect to Mio, it is applied to teach the different insulating materials to protect and insulate the heating element, and Mio is not applied to show the claimed recitation whether the heating element is provided on the opposite side of the heating surface. Mio clearly shows that it is known in the art to use alumina or silicone resin as the insulating layer and it teaches the advantage of using such insulating layer to protect an electrically conductive heating element.

The applicant argues that Ito et al requires no insulating covering, but such assessment or conclusion is not supported by Ito et al that does not disclose any other contrary teachings. The advantage or benefits of having the insulating layer is clearly taught by the applied prior art.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 703-308-1147. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.



Sang Y Paik
Primary Examiner
Art Unit 3742

syp